

**DECISION AND
FINDING OF NO SIGNIFICANT IMPACT
FOR
MANAGEMENT OF BEAVER DAMAGE WITHIN THE STATE OF MAINE**

The U.S. Department of Agriculture, Animal and Plant Health Inspection Service (USDA-APHIS), Wildlife Services (WS) program responds to requests for assistance from individuals, organizations and agencies experiencing damage caused by wildlife. Ordinarily, according to APHIS procedures implementing the National Environmental Policy Act (NEPA), individual wildlife damage management actions may be categorically excluded (7 CFR 372.5(c), 60 Fed. Reg. 6000-6003, 1995). To evaluate and determine if any potentially significant impacts to the human environment from WS' planned and proposed program would occur, an environmental assessment (EA) was prepared. The EA documents the need for beaver damage management in the State of Maine and assessed potential impacts of various alternatives for responding to damage problems. WS' proposed action is to implement an Integrated Damage Management (IDM) program on all land classes in Maine. Comments from the public involvement process were reviewed for substantial issues and alternatives which were considered in developing this decision.

The EA analyzes the potential environmental and social effects for resolving beaver damage related to the protection of agricultural and natural resources, property, and threats to public health and safety on private and public lands in Maine. The State of Maine has an area of 19.8 million acres; in Fiscal Year-99 {(FY-99) October 1-September 30}, Maine WS had agreements to conduct beaver damage management on about 2,286 acres of the land area {Management Information System (MIS) 1999}. In FY-98 there were 908 beaver damage management projects conducted on properties covering an area of about 2,448 acres of the land area of Maine (MIS 1998). In FY-99 there were 782 beaver damage management projects conducted on approximately 2,286 acres of the land area of Maine (MIS 1999).

WS is the Federal program authorized by law to reduce damage caused by wildlife (Animal Damage Control Act of March 2, 1931, as amended (46 Stat. 1486; 7 U.S.C. 426-426c) and the Rural Development, Agriculture, and Related Agencies Appropriations Act of 1988, Public Law 100-102, Dec. 27, 1987. Stat. 1329-1331 (7 U.S.C. 426c). Wildlife damage management is the alleviation of damage or other problems caused by or related to the presence of wildlife, and is recognized as an integral part of wildlife management (The Wildlife Society 1992). WS uses an Integrated Wildlife Damage Management (IWDM) approach, commonly known as Integrated Pest Management (WS Directive 2.105) in which a combination of methods may be used or recommended to reduce damage. WS wildlife damage management is not based on punishing offending animals but as one means of reducing damage and is used as part of the WS Decision Model (Slate et al. 1992, USDA 1997, WS Directive 2.201). The imminent threat of damage or loss of resources is often deemed sufficient for wildlife damage management actions to be initiated (U.S. District Court of Utah 1993). Resource management agencies and individuals have requested WS to conduct beaver damage management to protect agricultural and natural resources, property, and wildlife, including threatened and endangered (T&E) species in Maine. All Maine WS wildlife damage management is in compliance with relevant laws, regulations, policies, orders and procedures, including the Endangered Species Act of 1973 and Clean Water Act.

Maine WS consults and works with the Maine Department of Inland Fisheries and Wildlife (MDIFW), Maine Department of Agriculture (MDA), Maine Department of Transportation (MDOT), Maine Department of Forestry (MDOF), Maine Department of Environmental Protection (MDEP) and U.S. Army Corps of Engineers (USACE) to reduce wildlife damage. The MDIFW has the responsibility to manage all wildlife in Maine, including federally listed T&E species and migratory birds, which is a joint responsibility with the US Fish and Wildlife Service (USFWS). Memoranda of Understanding (MOUs) signed between APHIS-WS and the MDIFW and MDA clearly outline the responsibility, technical expertise and coordination between agencies. A Multi-agency Team with representatives and consultants from each of the aforementioned agencies convened to assess the impacts of WS beaver damage management in Maine. The MDIFW, MDA and MDOT, MDOF and USACE worked with Maine WS to determine whether the proposed action is in compliance with relevant management plans, laws, regulations, policies, orders, and procedures.

Consistency

Wildlife damage management conducted in Maine will be consistent with MOUs and policies of APHIS-WS, the MDIFW, MDA, MDOT, MDOF, MDEP, USFWS, USACE, and the EA. The agencies may, at times, restrict damage management that concerns public safety or resource values.

The analyses in the EA demonstrate that Alternative 1: 1) best addresses the issues identified in the EA, 2) provides safeguards for public health and safety, 3) provides WS the best opportunity to reduce damage while providing low impacts on non-target species, 4) balances the economic effects to agricultural and natural resources, and property, and 5) allows WS to meet its obligations to the MDIFW and other agencies or entities.

Monitoring

The Maine WS program will annually provide to the MDIFW the WS take of target and non-target animals to help insure the total statewide take (WS and other take) does not impact the viability of beaver populations as determined by the MDIFW. In addition, the EA will be reviewed each year to ensure that it and the analysis are sufficient.

The largest number of beaver removed by Maine WS to resolve damage problems in any year was 56 beaver in FY 97 (Table 1). However, the public involvement process for this EA resulted in an increased public awareness of Maine WS damage management assistance. As a result, there is a potential for increased requests for assistance with beaver damage problems and the potential requirement for the removal of a larger number of beaver.

As stated above, 56 beaver was the most beaver lethally removed by Maine WS in any previous year. The most likely anticipated WS kill in the next 12 months is 100 - 200 beaver, with a maximum anticipated WS kill of 3,000 beavers in subsequent years.

Based on research studies, USDA (1997, Table 4-2) stated that beaver populations could sustain an annual harvest rate of up to 30% without declining (Novak 1987). The largest number of beaver killed previously by Maine WS was 56 beaver in FY97 or .1% of the minimum estimated population (Table 1). Assuming a maximum WS kill of 3,000 beaver annually, the total kill of beaver would be only 6% of the estimated minimum beaver population of 53,200. Maine WS' highest take of beaver appears to have a minimal impact on the overall beaver population but, when added to the Private Take of 31%, reaches a level of 37%. This level of Total Kill would begin to cause a decline in the population if harvest is sustained at this level. However, it is likely that MDIFW would adjust the overall beaver season to reduce the overall kill as the initial statewide harvest exceeded management goals and thus WS' take has a low magnitude of impact.

Public Involvement

Issues related to the proposed action were initially developed by an interdisciplinary team involving the MDIFW, MDA, MDOF, MDOT, and USACE. This Multi-agency team refined the issues and identified preliminary alternatives. Due to interest in the Maine WS Program, the Multi-agency Team concurred that Maine WS include public involvement in this EA process. An invitation for public comment letter containing issues, objectives, preliminary alternatives, and a summary of the need for action, was sent to five individuals or organizations identified as interested in Maine WS projects. Notice of the proposed action and invitation for public involvement was placed in one newspaper (Bangor Daily News) with circulation throughout Maine. There was a 30-day comment period for the public to provide input on the development of the EA. Initial comments from the public were documented from 4 letters or written comments. WS released a pre-decisional EA approximately 22 months after the initial public comment period. As noted in the initial public comment letter, the EA was sent to the 4 commentators and availability of the EA was advertised in the same newspaper, and there was a second 30-day comment period. No comment letters were received from the public

Table 1. Beaver Population Estimate and Take in Maine Including the WS Program for FY 97.

	Conservative Beaver Population Estimate
Est. Population	53,200
WS Kill FY-97	56
Private Take (MDIFW data)	16,640
Total Kill	16,696
WS Kill - % of Population	0.1%
Other Kill - % of Population	31.0%
Total Kill - % of Population	31.1%

after review of the pre-decisional EA. At the request of Tribal representatives, the second 30 day comment period was extended an additional 30 days for the Indian Tribes of Maine to allow tribes ample opportunity to comment. Three comment letters were received from the Passamaquoddy, Maliseet and Penobscot Indian Nations during this extended 30-day comment period.

Major Issues

The EA describes the alternatives considered and evaluated using the identified issues. The following issues were identified as important to the scope of the analysis (40 CFR 1508.25).

- Effects on wildlife populations including non-target species and T&E species
- Humaneness of control techniques
- Effects of beaver dam removal on wetland wildlife habitat
- Effects of beaver management on public safety
- Esthetics and conflicts

Affected Environment

The areas of the proposed action includes town, state and interstate highways, private gravel roads, railroads and their right-of-ways where beaver activities could cause damage. These areas may also include property in or adjacent to subdivisions, business and industrial parks where beaver impound water, gnaw or fell trees. Additionally, affected areas would include timberlands, crop lands, and pastures that experience financial losses from beaver flooding or gnawing.

Alternatives That Were Fully Evaluated

The following Alternatives were developed by the Multi-agency Team to respond to the issues. Four additional alternatives were considered but not analyzed in detail. A detailed discussion of the effects of the Alternatives on the issues is described in the EA; below is a summary of the Alternatives.

- Alternative 1 - Fully Integrated Beaver Damage Management (The Proposed Action/No Action). This alternative would allow for technical assistance, non-lethal and lethal beaver damage management based on the needs of multiple resources (agricultural and natural resources, property, and public health and safety) and would be implemented following consultations with the MDIFW, other state and federal agencies or Tribes, as appropriate. This alternative would allow for a Maine WS program to protect multiple resources on all land classes at the request of the land management agency or individual if a Cooperative Agreement and/or Agreement for Control with Maine WS, as appropriate, are in place. Alternative 1 conforms to the MOUs between WS, the MDIFW and MDA that recognize the management of wildlife damage in Maine as an important way to achieve land and resource management objectives. Analysis of Alternative 1 showed a low level of impact for the target species, non-target species and T&E species.
- Alternative 2 - No WS Beaver Damage Management in Maine. This alternative would result in no assistance from WS in reducing beaver damage in Maine. WS would not provide technical assistance or operational damage management services. Alternative 2 was not selected because WS is charged by law and reaffirmed by a court decision to reduce damage caused by wildlife (U. S. District Court of Utah 1993). This alternative would not allow WS to meet its statutory responsibility for providing assistance or to reduce wildlife damage. In addition, Alternative 1 violates MOUs between APHIS-WS and the MDIFW and MDA whereby the MDIFW and MDA mutually recognize that management of wildlife damage in Maine is important and may involve wildlife damage management to achieve management objectives.
- Alternative 3 - Technical Assistance Only. Under this alternative, Maine WS would not conduct operational beaver damage management in Maine. The entire program would consist of only technical assistance and all operational beaver damage management by WS in Maine would be eliminated. Alternative 3 was not selected because it would not allow WS to: 1) respond to all requests, 2) monitor the implementation of producer used non-lethal methods, 3) assist the MDIFW or USFWS in meeting wildlife management objectives, 4) address all

public health and safety requests, and 5) allow WS to assist with beaver damage as requested.

- **Alternative 4 - Non-lethal Beaver Damage Management.** This alternative would not allow the use of lethal methods by WS as described under the proposed action. Only non-lethal methods could be implemented by Maine WS to reduce damage caused by beaver. Alternative 4 was not selected because it would not allow WS to: (1) respond to all requests, (2) monitor the implementation of producer used non-lethal methods, (3) assist the MDIFW or USFWS in meeting wildlife management objectives, (4) address all public health and safety requests and (5) it would leave some of the public without a means to alleviate beaver damage.
- **Alternative 5 - Non-lethal Methods Employed Prior to the Use of Lethal Beaver Damage Management.** This alternative would not allow the use of lethal methods by WS as described under Alternative 1 until non-lethal methods had been attempted and implemented to relieve damage caused by beaver and found to be ineffective or inadequate. Alternative 5 was not selected because it would not allow WS to (1) respond to all requests, (2) monitor the implementation of producer used non-lethal methods; and (3) assist the MDIFW or USFWS in meeting wildlife management objectives.
- **Alternative 6 - Only Lethal Beaver Damage Management.** Under this alternative, only lethal operational damage management and technical assistance would be provided by WS. Alternative 6 was not selected because it would not allow WS to: 1) respond to all requests, 2) monitor the implementation of producer used non-lethal methods, and 3) assist the MDIFW or USFWS in meeting wildlife management objectives.

Alternatives Considered but not Analyzed in Detail are the Following:

Compensation for Wildlife Damage Losses. The Compensation Alternative would direct all Maine WS program efforts and resources to the verification of losses from beaver and providing monetary compensation. WS services would not include any direct damage management nor would technical assistance or non-lethal methods be provided. This alternative was eliminated from detailed analysis in USDA (1997) because of many disadvantages such as: (1) the alternative would require large expenditures of money and a large work force to investigate and validate all losses and to determine and administer appropriate compensation, (2) compensation would likely be below full market value and many losses could not be verified, (3) compensation would give little incentive to resource owners to limit damage through management strategies, (4) not all property owners/managers would rely completely on compensation and lethal control of beaver would most likely continue as permitted by state law, and (5) Congress has not appropriated funds to compensate for wildlife damage.

Bounties. Bounties or payment of funds for killing animals suspected of causing economic losses is not supported by the MDIFW and MDA. Maine WS concurs with these agencies because: (1) bounties are generally not effective in managing wildlife, (2) circumstances surrounding take of animals are largely unregulated, (3) no process exists to prohibit taking of animals from outside the damage management area for compensation purposes, and (4) Maine WS does not have the authority to establish a bounty program.

Eradication and Long-Term Population Suppression. The eradication and suppression alternative would direct all Maine WS program efforts toward planned, total elimination or large-scale suppression of beaver. Eradication of beaver in Maine is not supported by the public, MDIFW or WS. WS operates according to international, federal, and state laws and regulations enacted to ensure species viability.

Suppression would direct Maine WS program efforts toward managed reduction of certain problem wildlife populations or groups. To consider large-scale population suppression as a goal of the Maine WS program is not realistic, practical or allowable under present WS policy. In addition, Maine WS activities are expected to be conducted on only a small portion of the area where beaver damage occurs.

This alternative was not considered by Maine WS in detail because: (1) WS is opposed to the eradication or large scale suppression of any native wildlife species, (2) MDIFW opposes the eradication or large scale suppression of any native Maine wildlife species, (3) the eradication or large suppression of a native species would be extremely difficult, if not impossible to accomplish, (4) eradication or suppression would be cost prohibitive, and (5) eradication is not acceptable

to most people.

Reproduction Control.

Under this alternative, beaver populations would be managed through sterilization or contraceptives. This alternative would implement the use of chemicals or surgical procedures to inhibit reproduction of beaver, and ultimately reduce population levels. Reduction of local populations would result from natural mortality combined with reduced fecundity. No beaver would be killed directly under this alternative; however, treated beaver would continue to cause damage. Populations of dispersing beaver would probably be unaffected.

Contraceptive measures for mammals can be grouped into four categories: surgical sterilization, oral contraception, hormone implantation, and immuno-contraception (the use of contraceptive vaccines). These techniques would require that beaver receive either single, multiple, or possibly daily treatment to successfully prevent conception. Chemical sterilants can be classified into one of three types: chemosterilants, immunocontraceptives, and temporary, short-term contraceptives. Chemosterilants have been suggested as a means to managing beaver populations (Davis 1961, Arner 1964). Several reproductive inhibitors have been proposed for use in beaver population reduction, including quinegestrol (17-alpha-ethynyl-estradiol - 3-cyclopentylether) and mestranol (Gordon and Arner 1976, Wesley 1978). While chemosterilants have been shown to reduce beaver reproduction in controlled experiments, there are no practical, effective methods for distributing chemosterilants in a consistent way to wild, free-ranging beaver populations (Hill et al. 1977, Wesley 1978).

As with chemical repellents and toxicants, a reproduction inhibitor could pose potential risks to non-target wildlife and the environment. Any material would have to be intensively tested and approved for use. Inhibition of reproduction may also affect behavior, physiological mechanisms, and colony integrity (Brooks et al. 1980). Additional research is needed before the environmental effects, and effects to populations and individual animals, from reproductive inhibitors are known. In addition, the use of chemosterilants or immunocontraceptives would be subject to approval by federal and state agencies. Currently, there are no chemical reproductive inhibitors registered to use for beaver damage management in the United States. Should a technique or chemical become registered and approved for use in Maine, it would be incorporated into the IDM Program in Maine.

This alternative was not considered in detail because: (1) it would take a number of years of implementation before the beaver population would decline and; therefore, damage would continue at the present unacceptable levels for a number of years; (2) surgical sterilization would have to be conducted by licensed veterinarians, would, therefore, be extremely expensive; (3) it is difficult to effectively live trap or chemically capture the number of beaver that would need to be sterilized in order to effect an eventual decline in the population; (4) no chemical or biological agents for contracepting beaver has been approved for use by state and federal regulatory authorities. Therefore, use of contraceptives at present is not realistic since there are no effective and legal methods.

Biological Control.

The only biological control that has been tried for managing beavers is the introduction of alligators (Wade and Ramsey 1986). Although alligators can and do sometimes prey on beaver, they cannot be relied on to reduce numbers to the point that damage no longer occurs. Alligators could not be introduced in Maine because they could not survive the climate. Introducing them could present hazards to people and pets. For these reasons, the method was not considered.

Finding of No Significant Impact

The analysis in the EA indicates that there will not be a significant impact, individually or cumulatively, on the quality of the human environment as a result of this proposed action. I agree with this conclusion and, therefore, find that an EIS need not be prepared. This determination is based on the following factors:

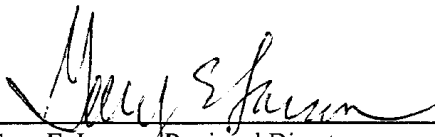
1. Beaver damage management, as conducted by WS in Maine, is not regional or national in scope.
2. The proposed action would pose minimal risk to public health and safety.

3. There are no unique characteristics such as park lands, prime farm lands, wetlands, wild and scenic areas, or ecologically critical areas that would be significantly affected.
4. The effects on the quality of the human environment are not highly controversial. Although there is some opposition to wildlife damage management, this action is not highly controversial in terms of size, nature or effect.
5. Based on the analysis documented in the EA and the accompanying administrative file, the effects of the proposed damage management program on the human environment would not be significant. The effects of the proposed activities are not highly uncertain and do not involve unique or unknown risks.
6. The proposed action would not establish a precedent for any future action with significant effects.
7. No significant cumulative effects were identified through this assessment. The number of beaver and muskrat taken by WS, when added to the total known other take of both species, falls well within allowable harvest levels.
8. The proposed activities would not affect districts, sites, highways, structures, or objects listed in or eligible for listing in the National Register of Historic Places, nor would they likely cause any loss or destruction of significant scientific, cultural, or historical resources.
9. An informal consultation with the USFWS confirmed that the proposed action would not conceivably adversely affect any T&E species.
10. The proposed action would be in compliance with all federal, state, and local laws imposed for the protection of the environment.

Decision and Rationale

I have carefully reviewed the EA and the input from the public involvement process. I believe the issues identified in the EA are best addressed by selecting Alternative 1 (*Fully Integrated Beaver Damage Management (The Proposed Action/No Action)*). Alternative 1 would provide the greatest effectiveness and selectivity of methods available, the best cost-effectiveness, and has the potential to even further reduce the current low level of risk to the public, pets and T&E species. WS will continue to use currently authorized wildlife damage management methods in compliance with all the applicable mitigation measures listed in the EA. Most comments identified from public involvement were minor and did not change the analysis. Therefore, it is my decision to implement the proposed action as described in the EA.

For additional information regarding this decision, please contact Edwin Butler, APHIS-WS, Capital West Business Center, 81 Leighton Road Suite 12, Augusta, Maine 04330.



Gary E. Larson, Regional Director
APHIS-WS Eastern Region

3/28/01
Date

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